Star's Gleam Saves Stefansson Party From Watery Graves

SHOWING *the* ESKIMO SNOW GOGGLES WHICH CONTAIN NO GLASS

KO-KA-ARK *in* STORMY WEATHER COSTUME

CARIBOU-SKIN TENT *of the* "STONE AGE" ESKIMO.

GROUP *of* PEOPLE *of the* LITTLE KNOWN VICTORIA ISLAND REGION

Warned by Reflection They Crawl to Safety After Straying Far Out on Thin Ice Over Swiftest of Arctic Currents

After his summer camp in the Continental Arctic Circle with the Copper Eskimos and his winter sojourn in the same vicinity, Mr. Stefansson, with Dr. Rudolph M. Anderson, his only white companion, set forth again to work northward and eastward into the little known region of Coronation Gulf in order to spend another year with the primitive Eskimos of the Stone Age and those who have since become known to all the world as the "blond Eskimos."

To-day's article tells of this journey and of his life among the people.

By VILHJALMUR STEFANSSON.

IT was near the end of March when we broke our winter camp on the headwaters of the Dease River in the interior mainland of North America and started once more for Coronation Gulf, the home of the people who had remained untouched by the ages that had rolled over Europe and America.

We had two toboggans and nine dogs and carried with us about four days provisions of meat, besides a few trade articles, chiefly butcher knives, needles and empty tin cans. The tin cans, although of little value to us, were of inestimable value to the Eskimos. One tin such as we throw away after emptying its contents will last a thrifty Eskimo housewife several years as cooking pot for boiling small things over a seal oil lamp.

I remember one trade we made where we gave some carpenter tools worth about $3 for a bow and quiver of arrows. The man later, with our permission, returned the carpenter tools and took in their stead a cubical tin which had once held about five pounds of dried onions.

On the northward journey we broke new ground, partly because we wanted to see the country further west than we had seen it before, but also because we thought that by going straight north from our camp we would probably strike the west end of Dismal Lake. We wanted not only to see the lake, but also to use the thirty-six smooth miles of its ice-covered length, because by doing so we were sure of just that much easy going.

After eight days we reached the Coppermine River and began to follow it along northward to reach the Arctic coast. It was a trip devoid of any unusual incidents and with simply the varying interest of an expedition that lives on the country. On the whole we found caribou in sufficient numbers to keep us and the dogs well in food.

Dr. Anderson had one attack of snow blindness owing to a hunt without glasses, and this leads me to mention that we have tried glasses of all colors and makes and have found the amber ones, made on the same principle as light filters for cameras, to be far superior to blue, green, plain smoked or any other variety.

The Eskimo goggles, which of course contain no glass, are made of pieces of wood with two narrow slits for the eyes, each about large enough for a half dollar to be slipped through it. They are satisfactory in that they do not cloud over and that they protect the eyes from snow blindness; but the range of vision is so restricted that it is as if you were looking through a pair of keyholes in a door. This is especially troublesome on rough ice or uneven ground, where you keep stubbing your toe against every obstacle, for through the narrow slits you can see what is in front of your foot only by looking directly down.

To the Arctic Coast.

On the evening of April 4 we abandoned the Coppermine and struck straight north about four miles to the sea coast, where we camped on finding a few sticks of wood. In spring, when the snow has melted, fresh drift wood may be found almost anywhere in Coronation Gulf, especially to the east of the Coppermine. But at this time of year the finding of a stick of wood on any of the shores is rare, so that we used to make it a practice whenever we saw a piece to put it on the sled and haul it along until camp time.

We had with us also a primus stove and a gallon and a half of kerosene, which we had hauled all the way from Langton Bay. These we kept for an emergency, as at this season seals from which we might have obtained blubber for fuel are not to be had in Coronation Gulf, except by the method of hunting practised by the local Eskimos, which depends partly on the ability of dogs in smelling out the breathing holes of the seals and partly on skill in that particular game. It is a hunting method in its essence requiring long delays, and thus not well adapted to travelling parties that are in a hurry, and kerosene was therefore of great value to us. We could of course have gone several days without any fuel at all, but it would have been a rather unpleasant experience, for the weather was very cold, going down to 50 degrees below zero at night occasionally.

We were on Coronation Gulf in search of people, and we had no idea where to look for them, except that they would not be anywhere near shore. We confirmed on entering the gulf a fact of which we had seen some indications the previous spring, that there are four times as many islands in it as the charts show us. Most of these occur in chains running about parallel to the south shore of the gulf, or tending somewhat offshore as you go east. It seemed to us the best plan, therefore, to follow one of these chains eastward and to spy from the tops of their high islands with our glasses.

Although the snow houses themselves are not easily seen at a great distance, an Eskimo village on the ice in spring presents as a whole a dark appearance, on account of the wet clothes that are hung up outdoors to be dried and because of the blubber bags and the other household belongings which are scattered about.

Trading With the Eskimos.

On April 10 we came to a village of fifteen persons belonging chiefly to the Nagyuktogmiut and Ungasiktagmiut groups, who hunt generally in the south central portion of Victoria Island in summer. We spent several days trading for ethnological specimens, chiefly clothing, stone lamps and stone pots, bows and arrows, caribou spears and harpoons. Most of these were tipped with copper, although the knives generally had iron blades made of gun barrels. This is due to the fact that the Eskimos who trade with the Hudson's Bay Company and with whalers on Hudson Bay buy guns and carry them west to a district where ammunition cannot be had. Then they trade them off to Eskimos still further west, who have no use for them as guns, having no ammunition or any knowledge of their use and who therefore beat them up into knife blades.

We discovered here the answer to a problem of long standing in the ethnology and archæology of the western Eskimo. At Cape Bexley the previous spring we had noted the abundance and excellence of the stone lamps and pots and had asked the people where they got them. Their answer had been that sometimes they purchased them from people to the east and sometimes individuals of their own tribe went east to the place where suitable stone could be found and made their own pots and lamps. This place they had named to us as Utkusiksalik, or the place where there is material for pots, and the people who lived in the district they called the Utkusiksaligmiut.

The Place of Stone Utensils.

We now found that some of the people in this village considered themselves Utkusiksaligmiut and that the place where the pot stone was to be found was the mouth of the valley of a small river clearly visible from this village as a V-shaped gap in the high hills in the mainland to the south.

From this quarry or from others lying between it and Back River must have come all the lamps and pots of the peculiar stone known to the Eskimos as tunirktak, found all the way from the Coppermine west to Bering Straits, and pending further investigations we may assume that utensils of the same stone found even in eastern Siberia among the Eskimos and coast Chuckcee must have come from the same sources.

We purchased here from its maker a lamp forty-three inches long, weighing about fifty pounds, which in spite of its being a fragile and inconvenient thing to carry has been safely transferred to civilization and is now in the American Museum of Natural History. Although we saw several larger lamps we were unable to purchase them from their owners, but forty-three inches is considerably more than the length of any other lamp known to us as existing in museums.

In this group we met people who had travelled further abroad than any we had previously seen. All whom I had asked up to this time whether Victoria Land were an island or not had invariably agreed that it was not an island; in other words, that there was no other side to it or sea surrounding it.

In this village, however, there were several people who expressed themselves definitely as knowing that there was an east side to the island. One of these, Iglihsirk, I questioned to see if he knew anything about the loss of Franklin's ships. I asked him if he had ever heard that a ship had been wrecked on the east coast of Victoria Island and what he knew about the fate of the men who had been on the ship. He said so far as he knew no ship had been wrecked on the east coast but that in his father's time two ships had frozen fast in the ice a long way offshore, beyond the east coast, and the white men on them had evidently abandoned them and all died.

Had the man answered my leading question offhand, saying that one ship had been wrecked on the coast, it might have been considered one of the cases of politeness among the Eskimos who usually answer any question in the way they think you would like to have it answered; but he had corrected me exactly in accordance with the facts already known to us, for Franklin's ships were not on the coast, but a considerable distance from it, and were abandoned before the ice broke up.

Misleading Native Information.

I will give here a striking example of how easy it is to be misled by native information. I had been led to believe in the spring that the Coronation Gulf people had no knowledge of the killing of bowhead whales, although they were familiar with carcasses that had drifted on their beaches. Neither had they apparently ever seen a live one, which is not strange, as bowhead whales are not only rare in these waters but the people are always inland in the summer and therefore not in position to see whales that might enter these waters in July or August. But now in this village we heard stories of whale killings, most of them centring about a man whom they called Kaplavinna.

They told how this person had on occasion even killed several whales in one day, and how he had a very large boat. This again was new information, for up to that time we had not heard about anything but kayaks. In the spring, in fact, the people had seemed unfamiliar with the very name of umiak, the native name for the big skin boats.

I listened with great wonder and asked many questions which were readily answered, but which threw no great light on the subject, until it occurred to me to ask one of the narrators: "Who told you this story? Did you get it from your father?" The man said: "No, I got it from Natjinna." Now Natjinna had been a camp follower of ours all summer, and I had asked him specifically in the spring both about bow headed whales and umiaks, and he knew nothing about either.

Some weeks later I happened to meet him and asked how was it that in the spring he had been unwilling to tell me anything about whales or big boats and now he told long stories to others about them. "Oh, but those were the stories that Natkusiak told me," he answered.

It turned out that my own man, Natkusiak, was the fountain head of all these stories. The redoubtable whaler "Kaplavinna," was none other than Natkusiak's former employer, Capt. Leavitt of the steam whaler Narwhal. These were the local versions, changed to fit the circumstances and geography of Coronation Gulf and translated into terms comprehensible to the Coppermine Eskimos.

I had heard Natkusiak telling these stories the previous spring, but the versions that came to me a year later were so changed that they were not recognizable, and had been so thoroughly localized graphically that the narrators actually could tell one off just which Coronation Gulf headland the adventures had taken place.

From the seeds sown by Natkusiak there had grown up a local myth about Kaplavinna and his whaling adventures—a myth which Natkusiak himself would have had fully as much trouble as I in recognizing—just exactly as the discussion of the Christian religion by a missionary and of a strange social and political system by a school teacher give rise to the most astounding ideas in the minds of the Alaskan Eskimos.

Another story which we picked up at this time was that of the "Imnait," vague, mysterious animals living in an unknown land to the west, which is also inhabited by the "Killgavait." This story did not give us so much trouble in identifying it, for the name of the monster "Imnait" was a correct reproduction of that used by my own Eskimos in the previous year in telling their adventures in mountain sheep hunting.

Mountain sheep, of course, are found nowhere east of the Mackenzie River and could not therefore be directly known to the Coronation Gulf Eskimos. These people were also unfamiliar with mountains and the dangers involved in mountain hunting. They had received from Natkusiak the general idea that mountain sheep hunting was dangerous, and being unable to ascribe any danger to the mountains they had transferred the dangerousness to the sheep themselves, and the hairbreadth escapes from death in snowslides which Natkusiak had described became in their version hairbreadth escapes from the teeth and claws of the ferocious mountain sheep.

The "Killgavait," which they associated with the mountain sheep in these narratives, were nothing but the mammoth, known to all branches of the Eskimo race by name at least, and known here also by the occasional finding of their bones. Of course Natkusiak had told nothing about mammoth hunting, but the mysterious mountain sheep naturally allied themselves in their minds with the also mysterious mammoth, and were therefore coupled together in recounting the same adventures. Thus we had a sidelight not only upon the origin of myths among primitive people, but also upon the startling rapidity with which they grow and change their form.

Journeys to the Moon.

Along with these stories of Kaplavinna and the mountain sheep we were also told essentially truthful ones of the trading expeditions of certain men of this district to the lakes above the head of Chesterfield Inlet, as well as entirely fictitious accounts of how certain men had, during the last few years, made journeys to the moon. One of the local shamans had for a familiar spirit the spirit of a white man, and in seances spoke "white men's language."

We were present at one of these seances; and when I said that I was unable to understand anything of what the white man's spirit said through the mouth of the woman whom he possessed, it was considered a very surprising thing, and apparently inclined some of the people to doubt that I was really a white man as I represented myself to be.

Not only does our experience here show how myths may originate, but it also shows how history and fact become mixed with fiction, and how facts are likely quickly to disappear, as in reality they do. It is impossible among the Eskimos, in the absence of extraneous evidence, to rely on anything that is said to have happened further back than the memory of the narrator himself extends.

The mind of the Eskimos is keen with reference to their immediate environment, although of course unable to grasp things that are outside of their experience. This keenness is shown especially in the use which they make of practically everything that can be turned to account in their struggle against Arctic conditions.

Wood is not especially scarce in Coronation Gulf; still, substitutes for wood have to be found now and then. We saw a sled which illustrated remarkably the resourcefulness of the Eskimo. A man named Kalariok found himself in the fall in need of a sled and with no wood to make one. He soaked a musk-ox skin in water, folded and pressed it into the shape of a plank, and put it outdoors to freeze. It froze as solid as any real plank, and with his adze he then hewed out of it a sled runner exactly as he would hew one out of a plank.

On the upper edge of the runner he made notches for the cross pieces as if it were ordinary spruce, drilled holes for the lacings and put in wooden cross pieces, and made a sled which I saw several times without discovering that it was in any way different from the wooden sleds. It was only when I tried to buy a sled that I discovered the difference. Two sleds were for sale, and I was told that one was better than the other because when the weather got warm it would still be useful, while the other would flatten and become worthless in warm weather and was therefore for sale for half the price.

This cheaper sled turned out to be the musk-ox skin one, for which as an ethnological specimen I would have been willing to pay much more than the other had there been any possibility of transferring it unchanged to a museum. There was, however, involved the same difficulty that has prevented in such places as Montreal the preservation of ice palaces from year to year.

News of a Ship.

Of all things that these Eskimos told us, the one that surprised us most was the undoubtedly true statement that a ship manned by white men and strange Eskimos was wintering in Coronation Gulf. This we felt as the reverse of good news, for the natural feelings of sympathy that had grown up through a year of association with these people, who in their way were so infinitely superior to their civilized brethren in the west, made me regret that civilization was following upon our heels.

Seeing she was there, we would of course pay her a visit. We were not in need of assistance from anybody, but still in a far country like this one is always willing either to help or to be helped. In other words, now that the ship was there we would make the best of a situation we regretted; we would make what use of her we could and be of as much use to her as possible, although had we had our way we should have wished her on the other side of the earth.

After loading up our sleds with far more ethnological specimens than our own dogs could haul, we purchased four more dogs and started off for the ship, which was about sixty miles away.

Our new dogs were homesick and we dared not unhitch them till we had travelled day and night, making about fifty miles before stopping, which is a long march when one is freighting a heavy load, although nothing particular if one has light sleds. At the end of the fifty miles neither ourselves nor our dogs were in reality tired out, but still we had to stop, for more than one of us had become so sleepy that it was literally impossible to keep awake. Finally Dr. Anderson stopped to fix his snowshoes and rolled over asleep on the snow.

Even at midnight at this season it is not quite dark. But when we started again for the final ten or twelve miles of travel we had slept away our warm sunshiny day and found ourselves travelling in a night which clouds and fog made dark, although it would have been light enough had the sky been clear. We had, therefore, not gone more than six or eight miles when we camped again for fear of missing the ship, for we were able to see but a few hundred yards.

Next day we reached the ship, the Teddy Bear, a little gasolene schooner of thirteen tons from Nome, Alaska, having on board only one white man, her owner, Capt. Joseph Bernard, and a crew consisting of the Eskimo Tulugak, with his wife, mother and three children. The Teddy Bear had wintered the year before at Barter Island and had come east with the intention of getting to the west coast of Victoria Island.

A Change of Plans.

It took Dr. Anderson and me but an hour or two to change all our plans, for now there presented itself the new resource of a ship willing to cooperate with us. We decided that Dr. Anderson, Tannaumirk and Panniga-bluk should stay in Coronation Gulf, where Dr. Anderson was anxious to continue his egg collecting and other zoological work, and that I, with Nathusiak alone for companion, should go north across Coronation Gulf and across the southwestern corner of Victoria Island to Prince Albert Sound, and thence to Banks Island, to spend the summer with the Eskimo tribes which we supposed lived there. In the fall the Teddy Bear, on her way west, would attempt to pick us up in De Salis Bay, on southeastern Banks Island. If she failed to find us, we would simply spend the autumn in Banks Island and sledge across south over the sea ice to Cape Parry and Langton Bay the following winter.

Capt. Bernard undertook to carry for us the stone lamps and cooking pots we had purchased from the Eskimos, while Dr. Anderson and Tannaumirk were to take the remainder of our collection to the mouth of Dease River, whence it would finally be transported to Fort Norman on the Mackenzie River, where they could be given into the hands of the Hudson's Bay Company for shipment to New York and Ottawa. All this programme was carried out and our geological and ethnological collections, without the loss of a single specimen, arrived in civilized lands about eighteen months after we gathered them in Coronation Gulf.

On April 30 Nathusiak and I started on one of the longest and most difficult of the trips we have taken together. We carried four rifles, for I hoped to hire a Victoria Eskimo to accompany us to Banks Island. We would have been able on this occasion to load our sled with as many provisions as we liked, for Capt. Bernard had an abundance, but we preferred to travel light.

The ice was level and the sun was warm, so that our sleds glided along easily. The season was already later than we would have wished, so that we did not loiter much by the way, and on the first day made something over fifty miles, taking turns in running ahead of the dogs.

Our travels, whether five miles or fifty per day, always meant that many miles of walking, for in my entire experience of over 10,000 miles of sled travel I have never sat on the sled except when it was going down a steep hill, with one or two exceptions when I suffered from chafed or blistered feet caused by improper footgear. It is unfair to the dogs and unwise as policy to ride on the sled.

If the dogs can haul you on top of the rest of the load twenty-five miles a day they could haul the load without you thirty or thirty-five, and the same principle applies whether you make fifteen or fifty miles in a day.

The object is never merely to see how many weeks and months you can stay away from home, but rather to see how many miles you can cover while you are away, and consequently you must do nothing to unnecessarily retard your progress. No man should engage in Arctic exploration who is unable to walk as many miles a day as his dogs are able to haul his sled and camp gear.

It is to be said for a craft which has made great advances in recent years that although many of the now dead and gone explorers whose names are engraved on the roll of fame as well as printed on ponderous volumes have been little better than baggage hauled along by the common men of their expeditions (whose very names seldom find a place in the records), the explorers of to-day, the men of the type of Peary and Shackleton, are almost without exception both willing and able to do their own work in the field and to require of their subordinates no more than what they demand of themselves.

Our course was about due north, and we made it by full daylight, which now extended to 10 o'clock in the evening, but when we turned into Dolphin and Union Straits we were in twilight, for there is in this latitude but a small arc of daylight in the north at midnight on the first of May. We knew that Lambert Island lies in the middle of the straits, and it seemed a desirable camping place, for I knew from Eskimo report that there was some driftwood upon it, and I thought I should find in this neighborhood the seal hunting village of the Noahonirgmiut.

With my six power Zeiss glasses I was able to see the land on either side of the straits, although it was not visible to the naked eye, as well as the dark mass ahead, which I knew must be Lambert Island. Besides this I saw scattered over the ice little black dots that were a puzzle to us. One of them was straight ahead and we were gradually approaching it. When we got within two or three hundred yards I turned my glasses on it again and found it to be a seal. Now it is not in the nature of seals ordinarily at this season of the year to lie on top of the ice in the dark of night. The thing was, therefore, a matter for speculation, as was also a large black patch on the ice beside the seal.

Ordinarily a seal at this time of year hauls himself out through a hole barely large enough for his body. But the black spot beside this seal was no small hole, but many square yards in extent and was therefore a mystery until the reflection of a star in it all at once made it clear that it was water. Things I had heard from the Eskimos about the strong currents in Dolphin and Union Straits came to my mind only then. I should of course have remembered them earlier, before we entered the strait.

I was perhaps 100 yards ahead of Natkusiak, who was following with the dog team. I immediately called to him to stop and simultaneously lay down flat on the ice, drew out my hunting knife and stabbed the ice. The knife went right through into the water; the ice was not much over an inch thick under about six inches of snow. I turned to crawl back when Natkusiak called out that the sled was settling, that it was already standing in a pool of water. Had it remained motionless for a few minutes it would gradually have settled until the ice broke, sending it to the bottom. I whistled to the dogs and crawling ahead of them made a slow circle and got around to our old trail again and then commenced a retreat.

Dangerous Travelling.

Every few yards I tried the ice with my knife and everywhere it seemed to be about an inch thick, while the sled tracks and footprints we had made going west were already black with water that had oozed into them. Continually testing the ice we had to return several miles before the ice was two or three inches thick, which is a safe thickness. We then began working toward the mainland shore, but every now and then we came to thinner patches and had to turn back. It took us some hours at this rate to get ashore. When we eventually got there the sun was high in the sky.

This was an adventure brought on, as most adventures are, by incompetence. I had had positive information of the dangerousness of Dolphin and Union Straits, but I had allowed myself to forget it, and because the ice was everywhere smooth and white I had walked thoughtlessly into the danger from which had we broken through there would have been no escape, for the current flows like a mill race.

When crawling back over the ice I had several times stopped to listen and could always hear the rustle of the water underneath the ice. Even if we had had no positive warning from the Eskimos the fact that Dolphin and Union Straits at this point are less than twenty miles wide should have made it clear that it was dangerous ground, for they connect the open ocean to the west with the large Coronation Gulf in the east and the tide currents are bound to be terrific.

The caribou migrations northward were in steady progress all around us. We saw marching bands on every hand. On the afternoon of May 1, after our adventure with the thin ice, we waited until a band of some twenty caribou started across the ice going north toward Lambert Island. We followed in their tracks, calculating that if they came upon weak ice they would fall through and thus warn us.

They did not break through. Their march was zigzag and took us much out of our way, but we followed their path rigorously and we got across safely. As a matter of fact we passed over on very thin ice. I tested it frequently and found it nowhere over two inches thick.

(To be continued next Sunday.)

Explorer Sets Out for Another Year With Blond Eskimo—Tin Cans as Legal Tender to Help Pay Way on Long Trip

Utilizing the Corncob

A BIG middle West hominy plant is to install on a large scale the process for the manufacture of corncob adhesive developed by the United States Department of Agriculture. This adhesive, a dark brown, gummy substance, is said to be suitable for use in the making of fibre board and paper boxes, bill posting, labelling, and wherever a colorless adhesive is not required. The process of manufacture is simple and the yield is large, the grade A adhesive amounting to as much as 45 per cent. by weight of the corncobs and the grade B to as much as 30 per cent. additional. If this material should replace all other adhesives, enough could be manufactured from 3 per cent. of the corncobs produced in the United States to meet the demand. Use of this substance in place of starch, dextrine and flour paste would make possible an enormous saving of these foodstuffs.

Corncobs have always been of the great waste products of American agriculture, yet the chemists of the Department of Agriculture have proved that practically the entire cob can be converted into valuable substances. About 37 per cent. by weight of the cob may be converted into crystalline glucose. The cellulose remaining after the adhesives are removed is practically a pure product, very absorbent, and might be used for a number of purposes.

Alcohol can be manufactured by fermentation of the corncob glucose. A certain amount of sugar may be obtained from the cobs. About 1.5 per cent. by weight of acetic acid is recovered as a by-product in the manufacture of the corncob adhesive. Whether it will prove profitable to recover all of the by-products in the manufacture of adhesives can only be determined by commercial development.